Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1 (canceled)

2. (currently amended) A filter cartridge which is prepared by winding a non-woven fabric strip comprising a thermoplastic fiber around a perforated cylinder in a twill form, said thermoplastic fiber being direction aligned, wherein the non-woven fabric strip satisfies the following equation (B):

$$\log_{10} Y < 3.75 - 0.75 (\log_{10} X) \qquad (B)$$

wherein X ($cm^3/cm^2/sec$) is an airflow amount of the non-woven fabric strip measured in accordance with JIS L 1096-A (1990), and Y (g/m^2) is a basis weight thereof; and

wherein the direction aligned fiber non-woven fabric is produced by a spun bonding method.

3. (currently amended) A filter cartridge which is prepared by winding a non-woven fabric strip comprising a thermoplastic fiber around a perforated cylinder in a twill form, wherein:

in winding in ~~a~~ the twill form, a number (W) of winding the non-woven fabric strip from one end to another end in a longitudinal direction of the perforated cylinder is one to 10 per a length of 250 mm in the perforated cylinder;

when a 2-fold value (2W) of the winding number (W) is represented by a fraction having a denominator of two figures or less which is a non-reducible approximate value, the denominator is 4 to 40; and

the direction aligned non-woven fabric is produced by a spun bonding method.

4 (canceled)

5. (previously presented) The filter cartridge as claimed in claim 2, wherein at least a part of fiber intersections of the non-woven fabric strip is thermally bonded.

6. (previously presented) The filter cartridge as claimed in claim 2, wherein the non-woven fabric strip has a width of 0.5 to 40 cm.

7. (previously presented) The filter cartridge as claimed in claim 2, wherein a product of a width (cm) and a basis weight (g/m^2) of the non-woven fabric strip is 10 to 200.

8. (previously presented) The filter cartridge as claimed in claim 2, wherein the non-woven fabric strip has a thickness of 0.02 to 1.20 mm.

9. (previously presented) The filter cartridge as claimed in claim 2, wherein the non-woven fabric strip is thermal compression bonded by means of a heat embossing roll having an embossing area rate of 5 to 25%.

10. (previously presented) The filter cartridge as claimed in claim ~~1~~ 2, wherein the filter material of the filter cartridge has a void rate of 65 to 85%.

11-13 (canceled)

14. (previously presented) The filter cartridge as claimed in claim 2, wherein the thermoplastic fiber is a composite fiber comprising a low melting resin and a high melting resin, a difference of the melting points between these resins being 10°C or more.

15. (previously presented) The filter cartridge as claimed in claim 2, wherein the thermoplastic fiber is a fiber formed from at least one thermoplastic resin selected from the group consisting of a polyester resin, a polyamide resin, a polyethylene resin and a polypropylene resin.

16. (withdrawn) A process for producing a filter cartridge, which comprises winding a non-woven fabric strip comprising a thermoplastic fiber around a perforated cylinder in a twill form, wherein the non-woven fabric strip satisfies the following equation (A):

$$\log_{10} Y < 3.75 - 0.6 (\log_{10} X) \qquad (A)$$

wherein X ($cm^3/cm^2/sec$) is an airflow amount of the non-woven fabric strip measured in accordance with JIS L 1096-A (1990), and Y (g/m^2), and Y (g/m^2) is a basis weight thereof.

17. (withdrawn) A process for producing a filter cartridge, which comprises winding a non-woven fabric strip comprising a thermoplastic fiber around a perforated cylinder in a twill form, wherein in winding in a twill form, a number (W) of winding the non-woven fabric strip from one end to the other end in a longitudinal direction of the perforated cylinder is one to 10 per a length of 250 mm in the perforated cylinder.

18 (canceled)

19. (previously presented) The filter cartridge as claimed in claim 3, wherein at least a part of fiber intersections of the non-woven fabric strip is thermally bonded.

20. (previously presented) The filter cartridge as claimed in claim 3, wherein the non-woven fabric strip has a width of 0.5 to 40 cm.

21. (previously presented) The filter cartridge as claimed in claim 3, wherein a product of a width (cm) and a basis weight (g/m^2) of the non-woven fabric strip is 10 to 200.

22. (previously presented) The filter cartridge as claimed in claim 3, wherein the non-woven fabric strip has a thickness of 0.02 to 1.20 mm.

23. (previously presented) The filter cartridge as claimed in claim 3, wherein the non-woven fabric strip is thermal compression bonded by means of a heat embossing roll having an embossing area rate of 5 to 25%.

24. (previously presented) The filter cartridge as claimed in claim 3, wherein the filter material of the filter cartridge has a void rate of 65 to 85%.

25 (canceled)

26. (previously presented) The filter cartridge as claimed in claim 3, wherein the thermoplastic fiber is a composite fiber comprising a low melting resin and a high melting resin, a difference of the melting points between these resins being 10°C or more.

27. (previously presented) The filter cartridge as claimed in claim 3, wherein the thermoplastic fiber is a fiber formed from at least one thermoplastic resin selected from the group consisting of a polyester resin, a polyamide resin, a polyethylene resin and a polypropylene resin.

28 (canceled)